

Q22 response, be more disease-resistant, and have other advantages as well. For example, animals raised for their coats would also be predicted to have more uniform coat color. - -

IN THE CLAIMS:

Kindly cancel non-elected claims 1-72 and 75-86, amend claims 73 and 74, and add new claims 87-162 as shown below:

Q23 73. (Amended) DNA of a cell having the genome of a non-human mammal, which DNA comprises telomeres comprising tandem repeat sequences that are more uniform than those present in telomeres of cells of said non-human mammal;

wherein said more uniform tandem repeat sequences are in the portions of the telomeres of said DNA that connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of cells of said non-human mammal.

74. (Amended) The DNA of Claim 73, which comprises telomeres that are longer than telomeres of cells of said non-human mammal.

The new claims:

Q24 87. The DNA of Claim 73, which comprises telomeres that are at least as long as telomeres of cells of said non-human mammal.

88. The DNA of Claim 73, wherein the non-human mammal is a pig, goat, cat, dog, rat, mouse, bovine, buffalo, sheep, horse, rabbit, or a non-human primate.

89. The DNA of Claim 73, wherein the non-human mammal is an ungulate.

90. The DNA of Claim 89, wherein the ungulate is a bovine.

91. The DNA of Claim 73, which is genetically altered with respect to the DNA of said non-human mammal by addition, modification, substitution, or deletion of one or more genes.

92. The DNA of Claim 91, which is genetically altered by a method comprising homologous recombination.

224 93. Isolated DNA of a cell having the genome of a mammal, which DNA comprises telomeres comprising tandem repeat sequences that are more uniform than those present in telomeres of cells of said mammal;

wherein said more uniform tandem repeat sequences are in the portions of the telomeres of said DNA that connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of cells of said mammal.

94. The isolated DNA of Claim 93, which comprises telomeres that are longer than telomeres of cells of said mammal.

95. The isolated DNA of Claim 93, which comprises telomeres that are at least as long as telomeres of cells of said mammal.

96. The isolated DNA of Claim 93, wherein the mammal is a pig, goat, cat, dog, rat, mouse, bovine, buffalo, sheep, horse, rabbit, human, or a non-human primate.

97. The isolated DNA of Claim 93, wherein the mammal is an ungulate.

98. The isolated DNA of Claim 97, wherein the ungulate is a bovine.

99. The isolated DNA of Claim 93, wherein the mammal is a human.

100. The isolated DNA of Claim 93, which is genetically altered with respect to the DNA of said mammal by addition, modification, substitution, or deletion of one or more genes.

101. The isolated DNA of Claim 100, which is genetically altered by a method comprising homologous recombination.

102. DNA of a cell having the genome of a non-human mammal, which DNA comprises telomeres comprising tandem repeat sequences that are more uniform than those present in telomeres of an age-matched control cell of the same type and species that is not generated by nuclear transfer techniques;

wherein said more uniform tandem repeat sequences are in the portions of the telomeres of said DNA that are connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of the age-matched control cell.

103. The DNA of Claim 102, which comprises telomeres that are longer than telomeres of said age-matched control cell.

104. The DNA of Claim 102, which comprises telomeres that are at least as long as telomeres of said age-matched control cell.

105. The DNA of Claim 102, wherein the non-human mammal is a pig, goat, cat,

dog, rat, mouse, bovine, buffalo, sheep, horse, rabbit, or a non-human primate.

106. The DNA of Claim 102, wherein the non-human mammal is an ungulate.

107. The DNA of Claim 106, wherein the ungulate is a bovine.

108. The DNA of Claim 102, which is genetically altered with respect to the DNA of said non-human mammal by addition, modification, substitution, or deletion of one or more genes.

109. The DNA of Claim 108, which is genetically altered by a method comprising homologous recombination.

110. Isolated DNA of a cell having the genome of a mammal, which DNA comprises telomeres comprising tandem repeat sequences that are more uniform than those present in telomeres of an age-matched control cell of the same type and species that is not generated by nuclear transfer techniques;

wherein said more uniform tandem repeat sequences are in the portions of the telomeres of said DNA that connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of the age-matched control cell.

111. The isolated DNA of Claim 110 which comprises telomeres that are longer than telomeres of said age-matched control cell.

112. The isolated DNA of Claim 110 which comprises telomeres that are at least as long as telomeres of said age-matched control cell.

113. The isolated DNA of Claim 110, wherein the mammal is a pig, goat, cat, dog, rat, mouse, bovine, buffalo, sheep, horse, rabbit, human or a non-human primate.

114. The isolated DNA of Claim 110, wherein the mammal is an ungulate.

115. The isolated DNA of Claim 114, wherein the ungulate is a bovine.

116. The isolated DNA of Claim 110, wherein the mammal is a human.

117. The isolated DNA of Claim 110, which is genetically altered with respect to the DNA of said non-human mammal by addition, modification, substitution, or deletion of one or more genes.

118. The isolated DNA of Claim 117, which is genetically altered by a method comprising homologous recombination.

119. A chromosome comprising DNA of claim 73.

120. A chromosome comprising DNA of claim 87.

121. A chromosome comprising DNA of claim 91.

122. A chromosome comprising DNA of claim 102.

123. A chromosome comprising DNA of claim 104.

124. A chromosome comprising DNA of claim 108.

125. An isolated chromosome comprising DNA of a cell having the genome of a mammal, which DNA comprises telomeres that comprise more uniform tandem repeat sequences than are present in telomeres of cells of said mammal;

wherein said more uniform tandem repeat sequences are in the portions of the telomeres of said DNA that connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of the cells of said mammal.

126. The isolated chromosome of Claim 125 wherein said DNA comprises telomeres that are at least as long as telomeres of cells of said mammal.

127. The isolated chromosome of Claim 125, wherein said DNA is genetically altered with respect to the DNA of said mammal by addition, modification, substitution, or deletion of one or more genes.

128. An isolated chromosome comprising DNA of a cell having the genome of a mammal, which DNA comprises telomeres comprising tandem repeat sequences that are more uniform than those present in telomeres of an age-matched control cell of the same type and species that is not generated by nuclear transfer techniques;

wherein said more uniform tandem repeat sequences are in the portions of the telomeres of said DNA that connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of the age-matched control cell.

129. The isolated chromosome of Claim 128, wherein said DNA comprises telomeres that are at least as long as telomeres of said age-matched control cell.

130. The isolated chromosome of Claim 128, wherein said DNA is genetically altered with respect to the DNA of said mammal by addition, modification, substitution, or deletion of one or more genes.

131. Isolated DNA comprising a telomere produced by a method comprising:

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- a. removing genomic DNA from a recipient mammalian oocyte;
 - b. transferring a normal somatic mammalian donor cell that is senescent, near senescence, or checkpoint-arrested, the nucleus of said cell, or chromosomes of said cell, into the recipient mammalian oocyte to generate an embryo, and
 - c. generating a rejuvenated cell from said embryo; and
 - d. isolating DNA comprising a telomere from the rejuvenated cell.

132. The isolated DNA of claim 131, which DNA comprises telomeres comprising tandem repeat sequences that are more uniform than those present in telomeres of cells of the mammal from which said donor cell was derived;

wherein said more uniform tandem repeat sequences are present in portions of the telomeres of said DNA that connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of the cells of said mammal.

133. The isolated DNA of claim 131, which DNA comprises telomeres that are longer than telomeres of the mammal from which said donor cell was derived.

134. The isolated DNA of claim 131, which DNA comprises telomeres that are at least as long as telomeres of cells of the mammal from which said donor cell was derived.

135. The isolated DNA of claim 131, which DNA comprises telomeres comprising tandem repeat sequences that are more uniform than those present in telomeres of an age-matched control cell of the same type and species that is not generated by nuclear transfer techniques;

Q24 wherein said more uniform tandem repeat sequences are present in portions of the telomeres of said DNA that connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of the age-matched control cell.

136. The isolated DNA of claim 131, which DNA comprises telomeres that are longer than telomeres of an age-matched control cell of the same type and species that is not generated by nuclear transfer techniques.

137. The isolated DNA of claim 131, which DNA comprises telomeres that are at least as long as telomeres of an age-matched control cell of the same type and species that is not generated by nuclear transfer techniques.

138. The isolated DNA of claim 131, wherein the mammalian donor cell is derived from a pig, goat, cat, dog, rat, mouse, bovine, buffalo, sheep, horse, rabbit, human or a non-human primate.

139. The isolated DNA of Claim 131, wherein the mammalian donor cell is derived from an ungulate.

140. The isolated DNA of Claim 139, wherein the ungulate is a bovine.

141. The isolated DNA of Claim 131, wherein the mammalian donor cell is derived from a human.

142. The isolated DNA of Claim 131, wherein generating the rejuvenated cell comprises obtaining a teratoma cell, an embryonic disc cell, an inner cell mass cell, and/or a stem cell using said embryo, and generating the rejuvenated cell from said teratoma cell, embryonic disc cell, inner cell mass cell, or stem cell.

143. The isolated DNA of Claim 131, which is genetically altered with respect to the DNA of the mammal from which said donor cell was derived by addition, modification, substitution, or deletion of one or more genes.

144. The isolated DNA of Claim 143 which is genetically altered by a method comprising homologous recombination.

145. An isolated chromosome comprising the isolated DNA of Claim 131; wherein the step of isolating DNA comprising a telomere comprises isolating chromosomes from the rejuvenated cell.

146. An isolated nucleus comprising the isolated DNA of Claim 131; wherein the step of isolating DNA comprising a telomere comprises isolating the nucleus from the rejuvenated cell.

147. DNA comprising a telomere produced by a method comprising:

- a. removing genomic DNA from a recipient mammalian oocyte;
- b. transferring a normal somatic non-human mammalian donor cell that is senescent, near senescence, or checkpoint-arrested, the nucleus of said cell, or chromosomes of said cell, into the recipient mammalian oocyte to generate an embryo, and
- c. generating a rejuvenated cell from said embryo that contains DNA comprising a telomere.

148. The DNA of claim 147, which DNA comprises telomeres comprising tandem repeat sequences that are more uniform than those present in telomeres of cells of the mammal from which said donor cell was derived;

wherein said more uniform tandem repeat sequences are in the portions of the telomeres of said DNA that connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of the cells of said non-human mammal.

149. The DNA of claim 147, which DNA comprises telomeres that are longer than telomeres of cells of the mammal from which said donor cell was derived.

150. The DNA of claim 147, which DNA comprises telomeres that are at least as long as telomeres of cells of the mammal from which said donor cell was derived.

151. The DNA of claim 147, which DNA comprises telomeres comprising tandem repeat sequences that are more uniform than those present in telomeres of an age-matched control cell of the same type and species that is not generated by nuclear transfer techniques;

wherein said more uniform tandem repeat sequences are in the portions of the telomeres of said DNA that connect at one end to chromosomal, non-telomeric DNA, and are as long as the telomeres of the age-matched control cell.

152. The DNA of claim 147, which DNA comprises telomeres that are longer than telomeres of an age-matched control cell of the same type and species that is not generated by nuclear transfer techniques.

Q24 153. The DNA of claim 147, which DNA comprises telomeres that are at least as long as telomeres of an age-matched control cell of the same type and species that is not generated by nuclear transfer techniques.

154. The DNA of claim 147, wherein the mammalian donor cell is derived from a pig, goat, cat, dog, rat, mouse, bovine, buffalo, sheep, horse, rabbit, or a non-human primate.

155. The DNA of Claim 147, wherein the mammalian donor cell is derived from an ungulate.

156. The DNA of Claim 155, wherein the ungulate is a bovine.

157. The DNA of Claim 147, wherein the mammalian donor cell is derived from a human.

158. The DNA of Claim 147, wherein generating the rejuvenated cell comprises obtaining a teratoma cell, an embryonic disc cell, an inner cell mass cell, and/or a stem cell